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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,997	12/05/2001	Masahiro Suzuki	111355	2835

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EXAMINER	
LAM, HUNG H	
ART UNIT	**PAPER NUMBER**
2615	

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/001,997	SUZUKI ET AL.	
	Examiner	Art Unit	
	Hung H. Lam	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *23-30 and 45-47* is/are allowed.

6)☒ Claim(s) *31-44 and 48-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendments, filed on 11/23/05, have been entered and made of record. Claims 23-51 are pending. Claims 45-51 are added.

In review of Applicant's amendment to the title, and claim 35, the objections are hereby withdrawn.

Response to Arguments

2. Applicant's arguments see Amendment (Remarks), Page. 14, filed 11/23/05, with respect to the rejection(s) of claim(s) 41-44 and 49-51 have been fully considered but they are not persuasive. The amended and new claims are rejected in view of the same reference as cited in the previous Office Action.

With respect to independent **claims 41-44**, the Applicants argue that Taniguchi does not teach or suggest an arrangement in which white balance adjustment is performed based upon pixel outputs corresponding to the individual colors from the extracted area(s), in which the extracted areas that have a hue manifesting a frequency equal to or lower than a predetermined frequency value...based upon a hue frequency distribution among a plurality of partitions areas. The Applicants further argue that Taniguchi teaching does not correspond to extracting areas manifesting a frequency equal to or lower than a predetermined frequency value...based upon a

hue frequency distribution among the plurality of partition areas, and then performing the white balance adjustment.

The Examiner respectfully disagrees. Taniguchi teaches a relaxation factor calculating unit which encompasses the recognizing unit 52; In addition, the recognizing unit 52 is used for recognizing any simplified hue regions with the frequencies that are greater than a variable lower limit threshold in order to decrease the white balance adjustment (see Figs. 1 and 10; relaxation factor calculating unit 21 and white balance coefficient calculating unit 22; Col. 26, Ln. 36-67 – Col. 27, Ln. 1-28; Col. 34, Ln. 33-48); Taniguchi further teaches that the recognizing unit 52 classifying any simplified hue regions that are less than a variable lower limit threshold as a normal color distribution type and thereby setting the white balancing coefficient to increase the white balance adjustment; see the formulation of the variable lower limit threshold in (Col. 34, Ln. 64-67 - Col. 35, Ln. 1-67; Col. 35, Ln. 15-20). Further more, the white balance coefficient-calculating unit 22 is based on the result of the relaxation factor calculating unit 21, which encompasses the recognizing unit 52 (Col. 33, Ln. 30-Col. 34, Ln. 32; recognizing unit 52 is used for recognizing any simplified hue regions).

In view of the above, the Examiner believes that the broadest interpretation of the present claimed invention does in fact read on the cited reference for at least the reasons discussed above and as stated in the detail Office Action as follows.

Claim Rejections - 35 USC § 101

3. With regarding allowed claims 31-40, a new ground of rejection has been made. The Examiner regrets any inconvenience.

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Regarding claims 31-40, 44, 48 and 51, the claimed invention is directed to non-statutory subject matter. Simply, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "thing." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. See MPEP 2106.IV.B.1.

5. The examiner suggests changing the claim to read: " A computer readable medium stored thereon a computer program comprising a set of instructions, when executed by a computer, the computer program to be used to process an image signal constituting a subject image captured at an image-capturing element, with the program comprising instructions to perform:"

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 41-42, 44, 49 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi (US-5,619,347) in view of Takizawa (US-9,494,448).

With regarding to **claim 41**, Taniguchi discloses an image signal processing device that processes an image signal constituting a subject image captured at an image-capturing (Col. 9, Ln. 49-60), comprising:

A hue calculating unit (Fig. 10; 51; Col. 33, Ln. 30-34) that calculates a hue of each of a plurality of partition areas based upon pixel outputs from the partition areas (Figs. 6-7; Col. 24, Ln. 57-67 – Col. 25, Ln. 1-67; Taniguchi teaches that a simplified hue region numbers and value are calculated by using the RGB value of the white balance {WB} information AVE and BP; Taniguchi further teaches that the extracting unit 15 partitions a colored picture into a plurality of picture blocks and extracts the AVE {block average color data}, BP {block luminance data}, and white balance information; see Col. 9, Ln. 63-67; Col. 10, Ln. 61-67; Col. 11; Ln. 1-46).

An area extracting unit (Fig. 10; 52; Col. 33, Ln. 35-38) that extracts any area having a hue manifesting a frequency equal to or lower than a predetermined frequency value from the plurality of partition areas based upon a hue frequency distribution among the plurality of partition areas (see Figs. 1 and 10; relaxation factor calculating unit 21 and white balance coefficient calculating unit 22 ; Col. 26, Ln. 36-67 – Col. 27, Ln. 1-28; Col. 34, Ln. 33-48; Taniguchi teaches a relaxation factor calculating unit which encompasses the recognizing unit 52; In addition, the recognizing unit 52 is used for recognizing any simplified hue regions with the frequencies that are greater than a variable lower limit threshold in order to decrease the white balance adjustment; Taniguchi further teaches that the recognizing unit 52 classifying any simplified hue regions that are less than a variable lower limit threshold as a normal color distribution type and thereby setting the white balancing coefficient to increase the white balance

adjustment; see the formulation of the variable lower limit threshold in Col. 34, Ln. 64-67 - Col. 35, Ln. 1-67; Col. 35, Ln. 15-20. Further more, the white balance coefficient calculating unit 22 is based on the result of the relaxation factor calculating unit 21 which encompasses the recognizing unit 52; Col. 33, Ln. 30-Col. 34, Ln. 32).

A white balance adjustment unit that performs a white balance adjustment based upon pixel outputs corresponding to the individual colors from the area extracting unit (Fig. 1; Col. 10, Ln. 39-60; white balance adjustment unit is interpreted as WB coefficient calculating/ storing units 22-23 and white balance adjustment unit 14; Col. 5, Ln. 5-10; Col 9, Ln. 63-67 – Col. 10, Ln. 1-8; WB adjustment is based upon the pixels output corresponding to individual color red, green, blue, cyan and magenta that are within the simplified hue region of Fig. 6).

However Taniguchi fails to teach a light-receiving surface of the image-capturing element which is divided into a plurality of partition areas.

In the same field of endeavor, Takizawa teaches a camera with a solid state imaging color system wherein a light-receiving surface of a color filter array (Fig. 1, 20) is divided by a plurality of white, green, yellow and cyan color portion (Fig. 2; Col. 3, Ln. 1-40). Takizawa further teaches that the solid-state color imaging system permits white balance to be stably maintained and makes it possible to easily adjust the hue correction (Col. 2, Ln. 38-41; Col. 8, Ln. 40-67). In light of the teaching from Takizawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Taniguchi with the solid-state color imaging system having a plurality of partition areas as taught by Takizawa in order to stably maintained white balance and easily perform the hue adjustment and thereby having good reproduced colors (Takizawa; Col. 2, Ln. 38-41; Col. 8, Ln. 64-67).

With regarding to **claim 42**, Taniguchi in view of Takizawa discloses a digital camera (Takizawa; Fig. 1) having:

An image signal processing device according to claim 41 (see the rejection in claim 41).

A recording image-capturing element (Takizawa; Figs. 1, 11) that outputs an image signal for recording the captured subject image into a recording medium (Taniguchi; Fig. 1, picture memory 12; Col. 9, Ln. 50-55).

An image signal to be used for white balance adjustment is the image signal output by the recording image-capturing element (Taniguchi; Col. 9, Ln. 55-60).

With regarding to **claim 44**, Taniguchi discloses a computer-readable computer program product having a program to be used to process an image signal constituting a subject image captured at an image-capturing element (Col. 9, Ln. 49-60; the camera inherently includes a computer-readable program product in order for the camera to operate), with the program comprising instructions to perform:

Hue calculation processing (Fig. 10; 51; Col. 33, Ln. 30-34) in which a hue of each of a plurality of partition areas is calculated based upon pixel outputs from the partition areas (Figs. 6-7; Col. 24, Ln. 57-67 – Col. 25, Ln. 1-67; Taniguchi teaches that a simplified hue region numbers and value are calculated by using the RGB value of the white balance {WB} information AVE and BP; Taniguchi further teaches that the extracting unit 15 partitions a colored picture into a plurality of picture blocks and extracts the AVE {block average color

data}, BP {block luminance data}, and white balance information; see Col. 9, Ln. 63-67; Col. 10, Ln. 61-67; Col. 11; Ln. 1-46).

Area extraction processing (Fig. 10; 52; Col. 33, Ln. 35-38) in which any area manifesting a frequency equal to or lower than a predetermined frequency value is extracted from the plurality of partition areas based upon a hue frequency distribution among the plurality of partition areas (see Figs. 1 and 10; relaxation factor calculating unit 21 and white balance coefficient calculating unit 22; Col. 26, Ln. 36-67 – Col. 27, Ln. 1-28; Col. 34, Ln. 33-48; Taniguchi teaches a relaxation factor calculating unit which encompasses the recognizing unit 52; In addition, the recognizing unit 52 is used for recognizing any simplified hue regions with the frequencies that are greater than a variable lower limit threshold in order to decrease the white balance adjustment; Taniguchi further teaches that the recognizing unit 52 classifying any simplified hue regions that are less than a variable lower limit threshold as a normal color distribution type and thereby setting the white balancing coefficient to increase the white balance adjustment; see the formulation of the variable lower limit threshold in Col. 34, Ln. 64-67 - Col. 35, Ln. 1-67; Col. 35, Ln. 15-20. Further more, the white balance coefficient calculating unit 22 is based on the result of the relaxation factor calculating unit 21 which encompasses the recognizing unit 52; Col. 33, Ln. 30-Col. 34, Ln. 32).

White balance adjustment processing in which white balance adjustment is performed based upon pixel outputs corresponding to individual colors from the extracted area (Fig. 1; Col. 10, Ln. 39-60; white balance gain calculating unit is interpreted as WB coefficient calculating/ storing units 22-23 and white balance adjustment unit 14; Col. 5, Ln. 5-10; Col 9, Ln. 63-67 –

Col. 10, Ln. 1-8; WB adjustment is based upon the pixels output corresponding to individual color red, green, blue, cyan and magenta that are within the simplified hue region of Fig. 6).

However Taniguchi fails to teach a light-receiving surface of the image-capturing element which is divided into a plurality of partition areas.

In the same field of endeavor, Takizawa teaches a camera with a solid state imaging color system wherein a light-receiving surface of a color filter array (Fig. 1, 20) is divided by a plurality of white, green, yellow and cyan color portion (Fig. 2; Col. 3, Ln. 1-40). Takizawa further teaches that the solid-state color imaging system permits white balance to be stably maintained and makes it possible to easily adjust the hue correction (Col. 2, Ln. 38-41; Col. 8, Ln. 40-67). In light of the teaching from Takizawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Taniguchi with the solid-state color imaging system having a plurality of partition areas as taught by Takizawa in order to stably maintained white balance and easily perform the hue adjustment and thereby having good reproduced colors (Takizawa; Col. 2, Ln. 38-41; Col. 8, Ln. 64-67).

With regarding to **claim 49**, Taniguchi discloses an image signal processing device that processes an image signal constituting a subject image captured at an image-capturing element (Col. 9, Ln. 49-60), comprising:

A hue calculating unit (Fig. 10; 51; Col. 33, Ln. 30-34) that calculates a hue of each of a plurality of partition areas based upon pixel outputs from the partition areas (Figs. 6-7; Col. 24, Ln. 57-67 – Col. 25, Ln. 1-67; Taniguchi teaches that a simplified hue region numbers and value are calculated by using the RGB value of the white balance {WB} information AVE and BP;

Taniguchi further teaches that the extracting unit 15 partitions a colored picture into a plurality of picture blocks and extracts the AVE {block average color data}, BP {block luminance data}, and white balance information; see Col. 9, Ln. 63-67; Col. 10, Ln. 61-67; Col. 11; Ln. 1-46).

An area extracting unit (Fig. 10; 52; Col. 33, Ln. 35-38) that extracts any area having a hue manifesting a frequency equal to or lower than a predetermined frequency value from the plurality of partition areas based upon a hue frequency distribution among the plurality of partition areas (see Figs. 1 and 10; relaxation factor calculating unit 21 and white balance coefficient calculating unit 22; Col. 26, Ln. 36-67 – Col. 27, Ln. 1-28; Col. 34, Ln. 33-48; Taniguchi teaches a relaxation factor calculating unit which encompasses the recognizing unit 52; In addition, the recognizing unit 52 is used for recognizing any simplified hue regions with the frequencies that are greater than a variable lower limit threshold in order to decrease the white balance adjustment; Taniguchi further teaches that the recognizing unit 52 classifying any simplified hue regions that are less than a variable lower limit threshold as a normal color distribution type and thereby setting the white balancing coefficient to increase the white balance adjustment; see the formulation of the variable lower limit threshold in Col. 34, Ln. 64-67 - Col. 35, Ln. 1-67; Col. 35, Ln. 15-20. Further more, the white balance coefficient calculating unit 22 is based on the result of the relaxation factor calculating unit 21 which encompasses the recognizing unit 52; Col. 33, Ln. 30-Col. 34, Ln. 32).

A white balance gain calculating unit that calculates white balance gains based upon pixel outputs corresponding to the individual colors from the extracted area (Fig. 1; Col. 10, Ln. 39-60; white balance gain calculating unit is interpreted as WB coefficient calculating/ storing units 22-23 and white balance adjustment unit 14; Col. 5, Ln. 5-10; Col 9, Ln. 63-67 – Col. 10,

Ln. 1-8; WB adjustment is based upon the pixels output corresponding to individual color red, green, blue, cyan and magenta that are within the simplified hue region of Fig. 6).

However Taniguchi fails to teach a light-receiving surface of the image-capturing element which is divided into a plurality of partition areas.

In the same field of endeavor, Takizawa teaches a camera with a solid state imaging color system wherein a light-receiving surface of a color filter array (Fig. 1, 20) is divided by a plurality of white, green, yellow and cyan color portion (Fig. 2; Col. 3, Ln. 1-40). Takizawa further teaches that the solid-state color imaging system permits white balance to be stably maintained and makes it possible to easily adjust the hue correction (Col. 2, Ln. 38-41; Col. 8, Ln. 40-67). In light of the teaching from Takizawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Taniguchi with the solid-state color imaging system having a plurality of partition areas as taught by Takizawa in order to stably maintained white balance and easily perform the hue adjustment and thereby having good reproduced colors (Takizawa; Col. 2, Ln. 38-41; Col. 8, Ln. 64-67).

With regarding to **claim 51**, Taniguchi discloses a computer-readable computer program product having a program to be used to process an image signal constituting a subject image captured at an image-capturing element (Col. 9, Ln. 49-60; the camera inherently includes a computer-readable program product in order for the camera to operate), with the program comprising instructions to perform:

Hue calculation processing (Fig. 10; 51; Col. 33, Ln. 30-34) in which a hue of each of a plurality of partition areas is calculated based upon pixel outputs from the partition areas (Figs.

6-7; Col. 24, Ln. 57-67 – Col. 25, Ln. 1-67; Taniguchi teaches that a simplified hue region numbers and value are calculated by using the RGB value of the white balance {WB} information AVE and BP; Taniguchi further teaches that the extracting unit 15 partitions a colored picture into a plurality of picture blocks and extracts the AVE {block average color data}, BP {block luminance data}, and white balance information; see Col. 9, Ln. 63-67; Col. 10, Ln. 61-67; Col. 11; Ln. 1-46).

Area extraction processing (Fig. 10; 52; Col. 33, Ln. 35-38) in which any area manifesting a frequency equal to or lower than a predetermined frequency value is extracted from the plurality of partition areas based upon a hue frequency distribution among the plurality of partition areas (see Figs. 1 and 10; relaxation factor calculating unit 21 and white balance coefficient calculating unit 22 ; Col. 26, Ln. 36-67 – Col. 27, Ln. 1-28; Col. 34, Ln. 33-48; Taniguchi teaches a relaxation factor calculating unit which encompasses the recognizing unit 52; In addition, the recognizing unit 52 is used for recognizing any simplified hue regions with the frequencies that are greater than a variable lower limit threshold in order to decrease the white balance adjustment; Taniguchi further teaches that the recognizing unit 52 classifying any simplified hue regions that are less than a variable lower limit threshold as a normal color distribution type and thereby setting the white balancing coefficient to increase the white balance adjustment; see the formulation of the variable lower limit threshold in Col. 34, Ln. 64-67 - Col. 35, Ln. 1-67; Col. 35, Ln. 15-20. Further more, the white balance coefficient calculating unit 22 is based on the result of the relaxation factor calculating unit 21 which encompasses the recognizing unit 52; Col. 33, Ln. 30-Col. 34, Ln. 32).

White balance gain calculation processing in which white balance gains are calculated based upon pixel outputs corresponding to individual colors from the extracted area (Fig. 1; Col. 10, Ln. 39-60; white balance gain calculating processing is interpreted as WB coefficient calculating process which is executed by the white balance adjustment unit 14; Col. 5, Ln. 5-10; Col 9, Ln. 63-67 – Col. 10, Ln. 1-8; WB adjustment is based upon the pixels output corresponding to individual color red, green, blue, cyan and magenta that are within the simplified hue region of Fig. 6).

However Taniguchi fails to teach a light-receiving surface of the image-capturing element which is divided into a plurality of partition areas.

In the same field of endeavor, Takizawa teaches a camera with a solid state imaging color system wherein a light-receiving surface of a color filter array (Fig. 1, 20) is divided by a plurality of white, green, yellow and cyan color portion (Fig. 2; Col. 3, Ln. 1-40). Takizawa further teaches that the solid-state color imaging system permits white balance to be stably maintained and makes it possible to easily adjust the hue correction (Col. 2, Ln. 38-41; Col. 8, Ln. 40-67). In light of the teaching from Takizawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Taniguchi with the solid-state color imaging system having a plurality of partition areas as taught by Takizawa in order to stably maintained white balance and easily perform the hue adjustment and thereby having good reproduced colors (Takizawa; Col. 2, Ln. 38-41; Col. 8, Ln. 64-67).

8. Claims 43 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi in view of Takizawa and further in view of Takayama (US-5,473,375).

With regarding to **claim 43**, Taniguchi as modify by Takizawa discloses a digital camera (Takizawa; Fig. 1) having:

An image signal processing device according to claim 41 (see the rejection in claim 41).

A recording image-capturing element (Takizawa; Figs. 1, 11) that outputs an image signal for recording the captured subject image into a recording medium (Taniguchi; Fig. 1, picture memory 12; Col. 9, Ln. 50-55).

However Taniguchi in view of Takizawa fails to teach a photometering image-capturing element that outputs a photometering signal indicating a subject brightness level in each of photometering areas into which a photographic field is divided, wherein: an image signal to be used for white balance adjustment is the image signal output by the photometering image-capturing element.

In the same field of endeavor, Takayama teaches a camera having a photometering element (Fig. 2, 123) which measures brightness and outputs a signal to control circuit 7 in order to generate a white balance control signals to control the color balancing gain circuit (Figs. 2; control circuit 7; photometering element 123; color balancing gain circuit; steps 103-106; Col. 9, Ln. 50-55). Takayama further teaches a color meter is used to replace photometering element 123 for controlling a color balance and thereby appropriate gain control signal for the balancing circuit (Fig. 4; balancing circuit 4 and 5) are obtainable (Col. 10, Ln. 55-67 – Col. 11, Ln. 1-4). In light of the teaching from Takayama, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Taniguchi and Takizawa by having a color meter of Takayama in order to measure the brightness and generates an image

signal to control color balance gain circuit and thereby obtaining an appropriate gain control signal for the balancing circuit (Takayama; Col. 10, Ln. 65-67 - Col. 11, Ln. 1-4).

With regarding to **claim 50**, Taniguchi as modify by Takizawa discloses a digital camera having:

An image signal processing device according to claim 49 (see the rejection in claim 49);

A recording image-capturing element (Takizawa: Figs. 1; 11) that outputs an image signal for recording the captured subject image into a recording medium (Taniguchi: Fig. 1, picture memory 12; Col. 9, Ln. 50-55).

However Taniguchi in view of Takizawa fails to teach a photo metering image-capturing element that outputs a photo metering signal indicating a subject brightness level in each of photometering areas into which a photographic field is divided, wherein an image signal to be used for calculation of a white balance gain is the image signal output by the photometering image-capturing element.

In the same field of endeavor, Takayama teaches a camera having a photometering element (Fig. 2, 123) which measures brightness and outputs a signal to control circuit 7 in order to generate a white balance control signals to control the color balancing gain circuit (Figs. 2; control circuit 7; photometering element 123; color balancing gain circuit; steps 103-106; Col. 9, Ln. 50-55). Takayama further teaches a color meter is used to replace photometering element 123 for controlling a color balance and thereby appropriate gain control signal for the balancing circuit (Fig. 4; balancing circuit 4 and 5) are obtainable (Col. 10, Ln. 55-67 – Col. 11, Ln. 1-4). In light of the teaching from Takayama, it would have been obvious to one of ordinary skill in

the art at the time the invention was made to modify the device of Taniguchi and Takizawa by having a color meter of Takayama in order to measure the brightness and generates an image signal to control color balance gain circuit and thereby obtaining an appropriate gain control signal for the balancing circuit (Takayama; Col. 10, Ln. 65-67 - Col. 11, Ln. 1-4).

Allowable Subject Matter

9. Claims 23-30 are allowed as set forth by the previous office action.

Claims 45-47 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding independent **claims 45 and 47** the prior art of record neither anticipates nor renders obvious, "an image signal processing device that processes an image signal constituting a subject image captured at an image-capturing element, comprising:

an average calculating unit that calculates pixel output averages for individual colors in each of a plurality of partition areas into which a light-receiving surface of the image-capturing element is divided based upon the image signal;

an average ratio calculating unit that calculates a ratio of the pixel output average corresponding to another color to the pixel output average of a reference color for each partition area;

a hue detecting unit that detects a hue of each partition area based upon the ratio of the pixel output averages;

an area extraction unit that extracts any partition area with a hue manifesting a frequency equal to or lower than a predetermined frequency value from the plurality of partition areas based upon a hue frequency distribution among the plurality of partition areas; and

a white balance gain calculating unit that calculates white balance gain based upon pixel outputs corresponding to individual colors from the extracted area."

Regarding **claim 46**, the claim is allowed as being dependent of claim 45.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's primary, David Ometz can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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an area extraction unit that extracts any partition area with a hue manifesting a frequency equal to or lower than a predetermined frequency value from the plurality of partition areas based upon a hue frequency distribution among the plurality of partition areas; and

a white balance gain calculating unit that calculates white balance gain based upon pixel outputs corresponding to individual colors from the extracted area."

Regarding **claim 46**, the claim is allowed as being dependent of claim 45.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's primary, David Ometz can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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02/05/06

TUAN HO
PRIMARY EXAMINER